PROGRESS

OF

MEDICAL SCIENCE.

THERAPEUTICS.

UNDER THE CHARGE OF
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METHYLAL, A HYPNOTIC IN MENTAL DISEASE.

This substance was first introduced by PERSONALI (*Progrès Médicale*, July 2, 1887, No. 27). On animals it had both physiological, sleep-producing and toxic effects, ending in coma and paralysis with acceleration of pulse and respiration. Like paraldehyde and most hypnotics, it is eliminated by the lungs; it controls convulsions and is antagonistic to strychnia. MAIRET ET COMBEMALE found that gr. lxxv–ʒij were necessary to produce sleep, and that it was of value in chronic mental cases, but not in acute; that the effect was exhausted in six or eight days, but a few days' rest made it active again. It is relatively all the more valuable because in mental cases few hypnotics are to be depended upon; chloral, especially, in these observers' experience, is often disappointing.

The dose is given in sweetened water at bedtime. The analysis of cases is minute and the number of groups large, but it suffices to say that the results in general were good, except in acute mania. Special advantages are its solubility, pleasant taste and innocuousness. The authors consider it "justly superior to chloral, urethan and opium preparations."—*L'encéphal*, 1888, No. 3, p. 281.

SULPHONAL AS A HYPNOTIC.

The agreement among observers as to the unqualified merit of sulphonal is certainly remarkable. In addition to the original articles referred to in the July number of this journal, accounts of its use may be found as follows: Langgard u. Rabow, *Ther. Monatshefte*, May, 1888; Salgo, *Wiener med. Wochenschrift*, No. 20; Rosin, *Berlin. klin. Wochenschrift*, No. 18; Œstreicher, *Ibid.;* Cramer, *Münch. med. Wochenschrift*, June 12, 1888, p. 395; Schwalbe, *Deutsche med. Wochenschrift*, June 21, 1888, p. 499; Rosenbach, *Berlin. klin. Wochenschrift*, June 11, p. 481.

ŒSTREICHER finds it somewhat slower in action than the other hypnotics and advises its administration several hours before bedtime—nevertheless, he finds it very reliable, and recommends it especially for mental cases. Cramer's experiments wholly lie with this class. In 407 trials on 92 mental patients he had positive success in 92.6 per cent., the administration being followed by sleep of five or more hours, commencing for the most part in half an hour. He saw no bad results, though in one case ℥j in six days, and in two others gr. xlv daily for two months were given.

SCHWALBE'S paper is the most exhaustive, and his trials very carefully conducted. Out of 50 patients, in 66 per cent. a prompt and satisfactory action was obtained; in 24 per cent. the result was relatively poor, and in 10 per cent. negative. The patients had varied diseases, but analysis shows the important fact that in 24 cases of purely nervous insomnia success was complete in 90.3 per cent. On the contrary, when the primary affection determined the sleeplessness, the test was satisfactory in only 44.4 per cent. of cases. Schwalbe concludes from this, in agreement with Kast, the original observer, that sulphonal is purely a hypnotic and not a *narcotic;* that it has the power to quiet the excited brain and restore the equilibrium, if disturbed by a minor influence only (*e.g.*, a *slight* amount of pain), but retains this power only within narrow limits. Unlike morphine, it does not first diminish pain before sleep, nor in cases of cough did it diminish the tendency thereto during sleep. Schwalbe found it of no effect in cardiac dyspnœa, contrary to the experience of Kast (amylen hydrate, on the other hand, Schwalbe found to produce sleep in these cases, or at least an improvement in the dyspnœa). In twelve per cent. of cases, slight ill-effects were produced, of which the most constant were headache and vertigo, but nothing of importance. No serious after-effect was observed. In children the success was especially well marked. Schwalbe's dose was gr. xv–ʒss; in children, gr. iv.

WARMING MEDICINES BEFORE ADMINISTRATION.

LEWIN (*Berliner klinische Wochenschrift*) recommends the warming of medicines before administering and of subcutanoeus solutions as well. The absorption, he points out, is much quicker and the dose necessarily smaller.

SALICYLATE OF BISMUTH.

This preparation is said to combine the astringent properties of bismuth and the disinfecting worth of salicylate, and has been administered by EHRING (*Archiv f. Kinderheilkunde*, ix. p. 90) to a great many children with digestive disturbances. It proved itself a most excellent remedy in gastro-intestinal catarrhs depending essentially upon abnormal fermentation, especially if combined with lavage of stomach and intestines. It was given in the following mixture:

Bismuthi salicylat.	ʒj.
Glycerin.	℥ss.
Aquæ	q. s. ut ft. ℥iv.

One drachm every two hours, more or less according to age of child.

Taken as a powder it is apt to cause some gastric irritation; in one per cent. of cases a slight salicylate eruption appeared. Ehring thinks the remedy ought to be of use in cystitis and ammoniacal urine, since the urine after seventeen hours shows increased acidity and decomposes less readily.

ACETANILIDE—ANTIFEBRINE.

These two substances are identical, but SQUIBB (*Ephemeris*, vol. iii. No. 3) observes that the name antifebrine is controlled by patent, and consequently the price is enhanced. Acetanilide costs only half as much as antifebrine and one-eighth as much as antipyrine.

SACCHARIN.

According to the latest analysis, saccharin is a white powder, showing under the microscope a crystalline form and soluble in eighty per cent. alcohol or in hot water. It does not reduce Fehling's solution. It suffers no change in the system, and its elimination by the urine commences in half an hour (*Deut. med. Zeit.*, February 23, 1888, p. 197). The substance was first obtained in 1879 from coal-tar, and, on account of its intense sweetness (two hundred and eighty times that of sugar—one to two grains sweeten a cup of coffee), has come to be liberally used in manufactures—*e. g.*, beer.

In medicine its chief uses have been in diabetes, in place of cane sugar and as a corrigent. It has been looked upon as an indifferent substance in its effect on the system. Thus, PROF. MOSSO gave it in large quantities to animals without damaging results, and gr. lxxv in men produced no bad effects. SALKOWSKI (Virchow's *Archiv*, cv. p. 46) confirmed its innocuousness. STADELMAN, employing it on eleven patients, in doses of grs. l to grs. lxxv, found it harmless in nine, while in two others it caused severe gastric disturbance. PROF. LEYDEN, on the other hand, saw no ill results in a pretty extensive use of it in small doses of grs. ijss to grs. iij. Recently DR. WORMS, in a paper read before the Paris Academy of Medicine (*La Tribune Méd.*, May 13, 1888, p. 234), has reviewed the question and presented it in not quite so favorable a light. Used by five diabetics in the dose of gr. ss twice a day, it could not be borne in three of the cases longer than eight or ten days, but then caused loss of appetite, nausea, severe gastric pains and a sweet taste in the mouth. The reviewer emphasizes the need of further physiological study of saccharin, and looks upon the previous clean record as largely in the nature of certificates for the benefit of manufacturing chemists!

Saccharin has antiseptic properties, and Mosso noticed the fact that the urine of animals taking it kept longer. LITTLE (*Dublin Journal of Medical Science*, June, 1888, p. 493) has reported his use of it in ammoniacal urine dependent on paralysis of the bladder, on stricture or on prostatic disease. The results were highly satisfactory in a series of half a dozen cases. In one case of multiple calculi, in an old lady in which operation was refused, the urine, which had been intolerably putrid for three months, became non-ammoniacal and sweet in three or four days, and continued so. Little has not found it upsetting to the stomach; in fact, he emphasizes this point of advantage over other drugs given to improve the urine.

EICHHORST (quoted in *Münch. med. Wochsft.*, July 10, p. 478) in the treatment of diabetes, finds saccharin of much worth, but warns against its use in too large quantities, as it easily produces an unpleasant after-taste, nausea and disgust for the medicine.

DOSE OF ACONITIA—A WARNING.

The Pharmaceutical Society of Paris (*Presse med. Belge*, April 22, 1888, p. 135) sounds a note of caution in the use of *aconitia*. Numerous accidents from it were reported, though no notice of them had appeared in public print, and the alkaloid was declared perhaps the most violent poison known. Gr. $\frac{1}{240}$ (the usual dose of Duquesnel's aconitia) had produced in an adult dangerous symptoms. Granules of this strength were condemned, and it was recommended to dispense those of a strength of gr. $\frac{1}{600}$! in order rightly to proportion the dose. Digitalin was also declared powerful for evil and its dose too large.

COCAINE IN GENERAL ANÆSTHESIA.

HOLGER-RÖRDAM, of Copenhagen (*Schmidt's Jahrb.*, 1888, ii. p. 35), uses gr. j of cocaine, injected five minutes before commencing anæsthesia with chloroform, and claims for it that narcosis results much quicker, that the stage of excitement is wanting and that less chloroform is needed. No bad effects were observed either during or after the anæsthetic.

OXYCYANIDE OF MERCURY THE BEST OF ANTISEPTICS.

Compared with corrosive chloride (*Comptes rend. d. Soc. d. Biol.*, July 6, 1888, p. 585):

1. Its solution has a slightly alkaline reaction and precipitates albumin only slightly.
2. It is less irritant than solutions of sublimate.
3. There is less absorption by tissues than in case of sublimate.
4. Solution $\frac{1}{1500}$th does not attack, except slightly, the materials used in surgical instruments.
5. Tested by its power of keeping soup, the antiseptic power showed itself six times greater than that of the bichloride.
6. Tested by the power to destroy the micrococcus pyogenes aureus, the advantage was slightly in favor of bichloride, $\frac{1}{1400}$th to $\frac{1}{1500}$th.
7. Employed on suppurating surfaces or to render a mucous surface antiseptic, it furnishes much better results because of the tolerance by tissues and of feeble absorption.

The cyanide of mercury has about the same properties, but the oxycyanide is more powerful against the micrococcus pyogenes aureus.

CREOLIN AS ANTISEPTIC AND ANTIPARASITIC FOR THE INTESTINE.

HILLER, of Breslau, writing in the *Deutsch. med. Wochenschrift*, July 5, 1888, speaks in the most unqualified terms of praise in regard to creolin. In ammoniacal urine, washing out the bladder with $\frac{1}{2500}$th has given good results. Its properties as an antizymotic, its harmlessness and its non-irritating nature combine to make it the best of antiseptics for the gastro-intestinal tract. Hiller has accordingly used it in very many cases of catarrh, flatulence, meteorism, etc., with gratifying success. The dose has been gr. v–xv, usually t. i. d., an hour after meals, in thick gelatin capsules (thin capsules are acted upon by the creolin). The taste is tarry and disagreeable. In no case has he observed bad effects, and he has given as much as gr. cl in four days. A slight sensation of warmth and some taste in mouth after half an hour were the only sensations observed. Foulness of feces is corrected, diarrhœa diminishes and distention of abdomen disappears. Twice it was efficient as a vermifuge. Creolin is not soluble in water nor in gastro-intestinal juices; but of the *emulsion* which is formed Hiller believes that absorption would be slight.

[Creolin is a coal tar product. The latest analysis (*Deutsche med. Zeitschrift*, May 24, 1888, p. 516) makes it a compound mixture of carbolate of sodium, a resin soap, a fat soap and a hydrate of sodium.—Ed.]

Antiseptic Action of Chloroform Water.

This useful property of chloroform is well illustrated in the *Deutsche med. Wochenschrift*, Heft 19. Prof. Salkowski calls attention to the powerful antiseptic properties of chloroform water, which he extols in no mistakable terms. Having used it for years to prevent the decomposition of urine, special experiments have shown him that, if the chloroform be kept from evaporating, it stops all fermentative processes conditioned upon the vital activity of microörganisms; thus, milk keeps for months its original neutral and alkaline reaction. Solutions of cane and grape sugars, mixed with yeast, do not ferment. Albuminous solutions, meat-juice keep perfectly sterile; while ordinary solutions, used for purposes of control, showed bacteria in two days. It is, too, a disinfectant as well as an antiseptic. Very stinking meat-juice, shaken with chloroform water, was sterile after one hour's standing. Anthrax bacilli were innocuous after twenty-four hours' contact, and a culture of cholera comma bacillus was made inert in a minute.

From this experimental evidence Salkowski draws the following practical hints and urges experimental trial of chloroform water:

1. Chloroform water in the laboratory is a decidedly superior agent to add to all ferment solutions, albuminous fluids, extracts, etc.; it is far ahead of any other antiseptic. Here its volatility is of great advantage, permitting its removal by heat or air current when necessary. To preserve urine unchanged it is of great value. In urine already alkaline chloroform will not act on the *soluble* ferment present.

2. For the preservation of smaller anatomical preparations; the only drawback is its taking up the blood coloring matter, a difficulty which further experience may obviate.

3. In therapeutics as a solvent for alkaloids in solutions; subcutaneous injection, for the irritating effects of the chloroform are slight. With so few antiseptics of disinfection of the alimentary canal among our resources, this adaptation of it should be borne in mind.

Animals bear very large quantities (a dog got for four days in succession ℥vij in his food, without any effect). In cholera it should certainly be tried. Exceptionally in emergencies it might be used as an external antiseptic, though inferior to others. Its easy preparation (♏lxxv + (75!), shaken in a quart of water) is a recommendation.

[This proportion of chloroform is rather large, as about 1 part of chloroform to 200 of water is as much as will dissolve.—ED.]

A similar laudatory estimate of the value of chloroform in pharmacy for the preservation of extracts, making solutions of drugs, etc., may be found in the *American Journal of Pharmacy*, May, 1888, p. 248.

UNNA (*Monatsh. f. prakt. Dermat.*, 1888, Heft 9), on the recommendation of Hager, has used aqua chloroformi as a vehicle for subcutaneous solutions. He finds it to serve its purpose in preserving the solutions, while the chloroform, though it causes a slight burning sensation in the morphia solution, is of advantage through its anæsthetic properties in such solutions as that of ergotin and in Fowler's. For these he recommends it especially.

INTERNAL ANTISEPSIS.

BAGINSKY (*Deut. med. Woch.*, May 17, 1888), in an article on fermentative processes in the alimentary canal of children, points out that the question is by no means so simple as the mere presence of bacteria and getting rid of them; *e. g.*, he has shown that the bacterium lactis (for which he substitutes the name bacterium aceticum) normally present in the intestine destroys a pathological bacterium found in green diarrhœa—in other words that "a powerful antibacterial treatment, even if it were successful in the destruction of germs, as it is not, can under circumstances be a damage, because it interferes in the independent extermination fight of different forms of bacteria."

ANTISEPTIC TREATMENT OF TYPHOID.

LEGROUX (*Le Bull. Méd.*, June 17, p. 805) has used the following treatment in a large series of cases and believes in it. To all cases a good dose of calomel is first given, then if diarrhœa is prominent—

Naphthol . . . . Bismuth	āā gr. xl.

Make ten powders and give one every hour in capsule or suspended in milk.

If less diarrhœa, naphthol alone in same dose.

If tendency to constipation—

Naphthol	gr. xl.
Magnes. salicylat.	gr. xl.

Ten powders as before.

Legroux finds in this treatment numerous advantages, both local and general, as, *e. g.*, disinfection of stools, diminution of meteorism and believes it affects favorably the course of the disease.

ACTION OF CARLSBAD WATER ON THE GASTRIC FUNCTIONS.

SANDBERG and EWALD (*Centralblatt f. d. med. Wissensch.*, Nos. 16 and 18, 1888) have determined by a series of experiments the effects of Carlsbad water on the functions of the stomach.

For this purpose ten persons (of whom but three suffered from indigestion) were subjected to treatment, which consisted in administering water from the

Mühlbrunn spring, in quantities varying from a half pint to a pint and a half and at temperatures ranging between 68° and 122° F., for from thirty to thirty-six days. The effects were determined by examining the contents of the stomach removed by the stomach tube.

The results obtained, as will be seen, deviate very materially from those of Jaworski, who found that the continued use of Carlsbad water caused a diminution of both the hydrochloric acid and the pepsin of the gastric juice, and that finally the sensibility of the gastric mucous membrane became so far diminished that even the introduction of food was frequently insufficient to stimulate it to secretion.

A summary of their results is as follows:

1. Carlsbad water is a powerful gastric stimulant, so much so that half an hour after its ingestion it is often possible to demonstrate the presence of hydrochloric acid in the stomach contents.
2. After a four to five weeks' course of treatment no diminution in the secretion of pepsin could be noticed.
3. The same is true of the rennet (milk-curdling) ferment.
4. In those cases in which, before treatment, the acidity was rather below normal, the secretion of pepsin and of rennet was increased.
5. Carlsbad water stimulates gastric activity more powerfully than common water of the same temperature.
6. Absorption occurs very quickly; a half pint disappearing in fifteen to forty-five minutes.
7. Absorption takes place more rapidly at temperatures of from 122° to 131° F., than at lower ones of 68° to 104° F.

Caffeine Subcutaneously as a Cardiac Tonic.

Heuchard (*Le Bull. Méd.*, May 27, p. 705) gives the preference to caffeine over any cardiac stimulant for the relief of heart weakness dependent on any peripheral condition as—*e. g.*, pneumonia. It has these advantages: that its action is rapid, its elimination quick and that it is harmless. Digitalis (so commonly used in America) is too slow, requiring three to four days for its action. Caffeine acts in three ways: 1. General tonic; 2. Cardiac tonic; 3. Diuretic. Heuchard uses it also in all adynamic states, it displacing ether in his estimation.

Formula:

Sod. benzoat.	3
Caffeine	2
Aq. destill.	6

Give four to six syringefuls.

General Antidote for any Poison of Unknown Nature.

Magnes. ust. Carbon. lig. Ferri. oxid. hydrat.	Equal parts with sufficient water.

—*Pharm. Rundschau.*